2006 Forest Health Highlights

Maine

Eastern White Pine

January 2007

The Resource

Maine's forests provide much of the raw materials to fuel the State's mills and serve as the backdrop for the recreation industry. These forest-based industries employ more than 12 percent of Maine's workforce and generate over 11 percent of the State's payroll. The overall annual contribution of the forest resource to Maine's economy exceeds $8.5 billion. The forests of the State also provide watershed, environmental, wildlife, and recreational benefits. Forested parks and individual shade trees provide similar amenities in urban and suburban settings.

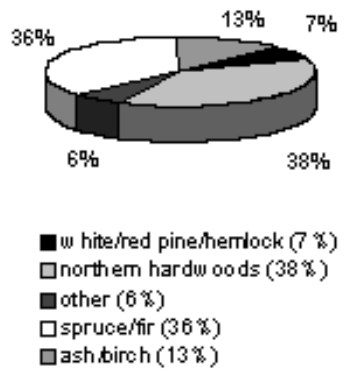
90% of the State is forested (17,689,000 acres)

Out of the forested area:

- **95.7% timberland**
- **4.3% noncommercial**

or reserved forest land

Major Forest Types:



Special Issues

The annual collection of Forest Inventory and Analysis data for long-term **forest inventory and monitoring** using a standard national plot design and core measurements, has been underway in Maine for 8 years. The Maine Forest Service has incorporated this survey, which integrates the traditional forest inventory with the Forest Health Monitoring Program, into its base internal assessment of forest condition. Beyond the nationally monitored variables such as tree condition, soils, lichens, and ozone bioindicator plants, additional data is collected to address local issues ranging from specific pest impacts to quality of wildlife habitat. The Maine Forest Service has also increased involvement in the USDA-APHIS Cooperative Agriculture Pest Survey, using this program to increase Maine's early warning survey capacity for nonnative forest pests.

Hemlock woolly adelgid was first detected in native hemlocks in Maine three years ago and currently occurs in light infestations scattered over approximately 6,500 acres in five towns in the southernmost tip of the state (Kittery, Wells, York, Eliot and South Berwick). Perhaps partly due to the mild winter and spring, adelgid populations increased within the previously infested area, and new spot infestations were found scattered in an abutting area of 500 acres in South Berwick and York. The Maine Forest Service is carrying out an integrated slow-the-spread management program to reduce the spread and impact of established adelgid populations in York County. Gerrish Island, where the adelgid was first detected in native hemlocks in Maine, has light to moderate populations throughout its hemlock stands. A series of predator releases have been made to control the population.

The Maine Forest Service has trapped for **pine shoot beetle** since 1999. During trapping surveys performed between 2000 and 2003, the beetle was collected in Oxford and Franklin Counties. These counties are currently under a state and Federal quarantine. During 2006, trapping was conducted at 44 sites (22 pine processing sites, three log yards, and 19 plantations/ natural stands with hard pines) in 11 counties. An additional 20 industrial locations were trapped for a suite of exotic wood borers and bark beetles, including pine shoot beetle. No adult pine shoot beetles were recovered from any of the traps in Maine in 2006 and no beetles have been caught in Maine since 2003. The Maine Forest Service has seen no indication that the pine shoot beetle is a pest of any significance, nor that it is intensifying or expanding its presence in Maine. To address the concern to ensure the supply of wood to the mills, the area under Federal regulation for this exotic is being expanded to include all of Maine, except Aroostook and Washington Counties.

Special Issues cont.

Balsam woolly adelgid populations continued at low levels in 2006. While mortality from past years is striking, the consistent rainfall of 2004 through 2006 coupled with low population levels of the adelgid allowed a number of the light to moderately damaged trees to recover. Trunk phase infestations has been reported on scattered trees in northern reaches of the adelgid's distribution, perhaps related to the mild winter and spring temperatures. Mortality of heavily damaged fir continues to occur, but it becomes less obvious as old stands are salvaged or fall to the ground. Patches of dead fir, two to ten acres in size, will remain a common sight in eastern Maine for several more years.

The **browntail moth** population in Maine continued to decline in 2006. Only 693 acres of defoliation was mapped in Freeport and Brunswick. Late instar larvae again showed signs of disease and/or parasitism. Fewer properties were sprayed by homeowners and complaints have declined. Populations will continue to be monitored.

No defoliation of hardwoods resulting from **gypsy moth** larval feeding was recorded in 2006. It is thought that *Entomophaga maimaiga*, virus, and parasites continued to keep the gypsy moth population at low levels throughout the infested area in southern and central Maine. Male moth catches were up, but not strikingly, in the infested area. To date, the 2006 fall egg mass survey indicates that the population will remain at endemic levels next season.

Moderate defoliation of red oak, maple, beech, and birch caused primarily by **saddled prominent** was detected in western Maine as well as in a small pocket in Westbrook/Falmouth in Cumberland County. The **green striped mapleworm** was found regularly in trap collections. Moderate to heavy defoliation was noticeable from the air on approximately 10,360 acres. The Cumberland County infestation was smaller than in 2005, but the western Maine area had expanded and was overlapped by birch leaf spot damage. Pheromone trapping in 2005 indicated a possible **winter moth** population in southern Maine. Defoliation from an early season defoliator was reported in the Wells area in 2006 and winter moth is strongly suspected.

Monitoring of low level **spruce budworm** populations continued in 2006. The population remains static at very low levels. Pockets of dead and dying larch infested with the **eastern larch beetle** have been common since the mid 1970's and continue to be a common sight throughout the range of larch in Maine. Stands of larch in southern and central portions of the State exhibit the highest mortality rates. Most tree mortality is generally in association with other stress factors, particularly extremes in water availability.

Unusually wet weather conditions that persisted throughout the spring, summer, and fall, resulted in a number of widespread **foliar diseases of hardwoods**. Oaks, ashes, maples, and birches were all affected to some degree statewide. Most notable were *Mycosphaerella fraxinicola* on ashes in central and mid-coastal regions of Maine, and *Septoria betulae* on paper birch. This *Septoria* appeared statewide and resulted in considerable early leaf shedding of paper birch, especially in the western regions of Maine. Heavy infections were also noted in the mid-coast region. **Pine needlecast** continued to be a problem on pitch pine in western Maine. The disease again was most severe in Fryeburg, Brownfield, and Waterboro areas, with a total of 11,064 acres affected.

Interest in ***Phytophthora ramorum***, the cause of sudden oak death in western states, increased again when the pathogen was found on infected lilac nursery stock in Farmingdale. Strict Federal quarantines are in place nationwide to limit its spread. To date, it has not become established in the Maine, or anywhere in the Northeast. While the infected nursery material was destroyed, a survey is planned for 2007 to ensure that the pathogen has not become established.

Beech bark disease, **Dutch elm disease,** and **butternut canker** continue to impact the forest resource throughout the State.

Regional Surveys

Forest Health Monitoring Program

In cooperation with the USDA Forest Service, Maine participates in the National Forest Health Monitoring Program. The program's objective is to assess trends in tree condition and forest stressors. All of the New England States have been involved since the program was initiated in 1990. A healthy forest is defined as having the capacity for renewal, for recovery from a wide range of disturbances, and for retention of its ecological resiliency.

Forest Health Monitoring Sites

The overall health of the forests in New England is good, with various damage agents present at different times and locations. Results from permanent sample sites indicate that there has been minimal change in crown condition in recent years. There are varying impacts from forest fragmentation, drought, fire, insects, and pathogens. The most significant pests are those that have arrived from other parts of the world, such as the gypsy moth, beech bark disease, and hemlock woolly

For More Information

Maine Forest Service
State House Station
Station #22
Augusta, ME 04333
(207) 287-4981

Forest Health Protection
USDA Forest Service
P.O. Box 640
Durham, NH 03824
(603) 868-7709

State and Private Forestry